1. **Q. Why does my chamber lockup during the boot process after I cycle the power?**

    A. Make sure that there isn't a non-bootable floppy disk in the drive. If there is, remove the disk and reboot. To create a bootable disk that you can leave in the drive during a power cycle, refer to: VersaTenn V AppNote 2 - Boot Disk Creation Rev 3.

2. **Q. How do I export the history file when it is larger than 1.44 MB and will not fit on a single floppy disk?**

    A. The Export History feature supports files that are larger than 1.44Mb and will fit not on a single floppy disk. These files must be exported by spanning multiple disks. You can find the screen for exporting the history file under the VersaTenn V's "Maintenance/File Utilities/Export History" folder. The VersaTenn V will guide you through a multiple floppy export, requesting the next floppy disk when the current one is full. Look at Application Note 3 for a complete description of this procedure.

3. **Q. Do I need to have Internet access to use the VersaTenn V's web server?**

    A. You do not need Internet access to use the VersaTenn V's web server. The web server only requires an Ethernet Local Area Network (LAN) connection. The VT V's web server feature can be very useful in a factory or office without Internet access. When you connect the VersaTenn V to a LAN you can monitor and control it from any PC on the LAN using Microsoft Internet Explorer. Internet access makes the feature even more useful when you want to monitor the VersaTenn V from home or when you want to give the Tenney factory access to the chamber for troubleshooting or training.

4. **Q. Why does my chamber never finish the "Wait For step" even though the temperature is higher than the Wait For value?**

    A. Make sure that the actual temperature isn't already above the Wait For value when you have a setpoint above it. This applies for cooling to, i.e. make sure that the actual temperature isn't already below the Wait For value when you have a setpoint below it. The Wait For step is not a "Wait until the temperature is greater than or equal too" so the temperature has to cross the Wait For value before the step finishes.

5. **Q. Do I have to power-cycle the chamber to reboot the controller? Is there a way to reboot from the front-panel?**

    A. There is a hole in the panel with a reset switch behind it just above the floppy drive and the keyboard and mouse connectors. Press this switch to reboot the controller. You'll need a paper clip or a small screwdriver to press it.

6. **Q. I don't know the IP address of my chamber, how do I connect to it?**

    A. When the VT V controller starts on a network that has a DHCP server, the controller will obtain an IP address. The IP address obtained is displayed in the Communications/Ethernet screen. If the controller fails to obtain an address, when the DHCP server is out of addresses or unavailable, the address field will show 0.0.0.0.

7. **Q. Do you plan to allow upgrades to the VT V software via your website as you improve the software?**

    A. We release version upgrades regularly. They can be obtained from Tenney/Lunaire. We don't have plans to post these to the website at this time but this could change.

8. **Q. The TCP/IP interface is currently configured for DHCP. When I tried to change the configuration to a fixed IP address, a message came up that said I do not have sufficient privileges to perform this operation. How do I get sufficient privileges? How do I configure the VT software for a fixed IP address? (Versions 1.4.88 and earlier)**

    A. VT V software earlier then version 2.0 does not support static IP addresses. By default, the Ethernet connection will use DHCP to get it's address. Selecting the Communications/Ethernet Static IP address configuration field has no effect on operation at this time.

    If you need to use a static IP address you can upgrade to version 2.0 or later.

9. **Q. Which software version is my controller is running?**

    A. You can go to the Maintenance screen on your controller and open the "About VersaTenn V" folder to find out.

10. **Q. Can I upgrade my system?**

    A. The software for the VersaTenn V consists of several components. Two of these are the main application and the Operating System (OS), both of which can be upgraded with a floppy. In addition, there is some firmware on an embedded single board computer that can be upgraded. The firmware upgrade requires the expertise of a qualified service technician.

11. **Q. What commands can I use to control and monitor the chamber?**

    A. The command list is version dependent. Determine which VTV Version you are running then contact our main office to receive an up to date list of available commands.

12. Q. What tools do I need to remotely control and monitor the chamber over the internet?

A. You can control and monitor the chamber over the world wide web using Microsoft Internet Explorer. You can also use any TCP/IP communication software to control the chamber with ASCII commands.

13. Q. Do I have to have the web server enabled to remotely control the chamber?

A. You do not need the web server to control the chamber over a network. Just turn on the TCP/IP server on the Communications screen. Then make a TCP/IP connection to port 5000 on the chamber. The chamber responds to ASCII commands.

14. Q. Why does my chamber display a Low Storage Alarm and how can I prevent the alarm condition from recurring?

A. The Low Storage alarm occurs because you have the Log File Size set to a value higher than the available memory. Over time, as the log file grows, it eventually uses up all the available system memory.
To remove the alarm, clear the history file. You can do this from the Maintenance\File Utilities\Clear History folder. To prevent the condition from recurring, go to the Setup\Logging\Setup folder and change the Log File Size to 1MB.

For more detailed information on managing memory, see:
VersaTenn V AppNote1 - Data Logging Capacity Calculations .pdf
VersaTenn V AppNote5 - Low Storage Alarm .pdf.

15. Q. How do I stop my chamber from tripping the Channel 2 High Alarm when it over shoots 100% humidity?

A. Go to the Setup\Calibration\Calibration Channel 2 folder and increase the Channel 2 High Alarm limit from 100% to 105%.

16. Q. When I try to set a value using TCP/IP, why does the value end up as 0 and not the value I entered?

A. You may be trying to send a value that is not a number, yet the field requires a number. Alphabetical characters are not included in range checking for numerically oriented parameters. When the VersaTenn V encounters an alpha character in what it thinks is a numerical location, it sets the parameter to the default value of 0. To correct the problem, reset the parameter using a number.

17. Why is my program skipping over the jumploop step?

Check to see which step you are jumping too, you may be jumping to step 0, a step that doesn't exist. This condition results from deleting step 1 when your jumploop step is also linking to step 1. When you delete the first line, the target for the jumploop reduces by one line. If the jumploop command is was jumping to the first step, it will decrement and reset itself to jump to step 0. When the program is subsequently run, it encounters a jump to step 0, which it interprets as a completed process, and goes on to the next step after the jumploop step.

18. Why is my program jumping to the wrong step?

Check to see which step you are jumping too; if you deleted the target step of the jumploop, the "jump to" step number will automatically decrement to the next earlier step. For example, if a jumploop targets step two and you delete step two, the jumploop will now target step one. To correct the problem, edit your jumploop step to jump to the correct step.

19. I unplugged the TCP/IP cable, and plugged it back in, but the unit is still not communicating. Why?

If you shut down TCP/IP communications ungracefully, such as unplugging the Ethernet cable while communicating over it, you may not be able to reconnect. To fix the problem, disable and re-enable the TCP/IP server. If this does not work, try rebooting the controller.

20. Why is my unit locking up and displaying a message that says "Low Memory Warning?" (Versions 1.4.88 and earlier)

You have encountered a memory leak issue related to the floppy disk drivers. To fix this problem, refer to 'VersaTenn V Application Note 2: Boot Disk Creation.'

21. When I query certain settings over TCP/IP, the unit returns values in Celsius even though I have set the unit to Fahrenheit. Why? (Versions 1.2.24 and earlier)

The VersaTenn V does not perform temperature conversions on the high and low alarm settings, the high and low channel limits and the guaranteed soak range. If it is necessary, manually apply the temperature conversions with a calculator or spreadsheet: °F = 1.8°C + 32°.

22. Why can't I edit the Channel 3 settings?

Temperature/humidity, temp/temp and temp only chambers do not use channel

3, so channel 3 is deactivated. Channel 3 is reserved for temp/humidity/pressure chambers only.

23. I opened the History Log, and it has outdated data at the bottom. Why?

The VersaTenn V always uses the same default name for the history logs it creates: exphst.txt. If this file already exists on the disk in the floppy drive, it maybe partially overwritten by the size of the current file. If there was a larger history log on the disk before you tried to save the current log, the end of the old file will appear at the bottom of the new file. To correct the problem delete the old exphst.txt file from the floppy before you export history.

24. Why does the VersaTenn V freeze when I'm using TCP/IP to communicate with it? (Versions 1.2.18 and earlier)

If the communications string is greater than 255 characters, the communications buffer is overflowing, causing the unit to freeze. Reboot the unit if this happens, and change the length of the communications string.

25. Why is the unit neither recognizing the floppy disk nor writing to it? (Versions 1.4.88 and earlier)

The floppy drive is polled every 15 seconds; you may not be waiting the full 15 seconds for it to be recognized. Also, the controller will occasionally read the floppy drive as empty, even if a disk is present. To fix the problem, eject the floppy, wait a second, reinsert it, wait another 15 seconds, and try again. The export history feature sometimes works better if you insert the floppy and wait for the green light on the drive to turn on for a moment. This means the VersaTenn V has detected the floppy. Press the Export button immediately after you see the green light. Furthermore, the VersaTenn V will not write to a disk that has less than 20 KB of space left. If this is the case, delete some files from the disk or use another floppy disk with more space.

26. Why doesn't the web interface correctly display what is showing on the VersaTenn's screen?

For the web interface to work correctly, you must be using Internet Explorer and have it configured correctly. Refer to 'VersaTenn V Application Note 7: Using the Web Server" to set it up correctly. If you have set it up correctly, and the display does not look right, click on the blue menu bar at the top of the screen to refresh the screen.

27. When I load a test script, the VTV says that some steps are out of range and leaves them out, why? (Versions 1.3.99 and earlier)

There is a known profile loading error in VT V versions 1.3.9 and earlier when

a controller is set to Fahrenheit. This error makes the profile loader reject set point statements that should be accepted. The profile checker is erroneously converting the High Limit Ch1 setting to a Celsius value. Thus, if the High Limit Ch1 value is set to 150 F, the checker erroneously changes it to 65 F during the profile load process and rejects set points over 65F.

To work around this problem, change your High Limit Ch1 to its default value of 932 F (500 C) or a temperature scaled appropriately. You can find this setting in the Setup\Special Functions\High Limit Channel 1 folder.

28. What is the difference between the system RAM and the Storage Card?

Like a PC, the VersaTenn V uses a DIMM memory module for system RAM. The VT V incorporates a single 32 MB Random Access Memory (RAM) module. When the chamber power is removed, all data on the RAM card is lost.

The Storage Card on the VT V is a 16 MB, Disk-on-Chip, flash memory device that acts like a Personal Computers (PC) hard disk drive. It stores all the persistent data including the VT V application and operating system, vpl profile files, log files and chamber settings.   Storage card data is not lost when the chamber power is cycled.

29. What is the difference between Low Program Memory and Low Storage alarms?

a. Low Program Memory Alarm

The Low Program Memory alarm is associated with system RAM (See FAQ 28). The default minimum free RAM setting is 1,500 kb. When the available free RAM goes below 1,500 kb, the VersaTenn V displays a warning window that says: "The VersaTenn V is running low on memory. Please reboot at your earliest convenience."   At this point there may still be enough memory to complete any running tests but reboot the chamber as soon as is convenient.

If the VersaTenn V does runs out of RAM the unit will lock up and need to be rebooted. Since RAM is volatile memory, the reboot process will release and RAM and your chamber will restart with a full compliment of free RAM. Rebooting the chamber is the only way to remove this alarm condition.

To find out how much RAM is available, go to the Maintenance\About VersaTenn folder and look at the bottom of the screen. You will see a line that displays the total RAM of the system, the unused or available RAM and the percent RAM currently being used. Available RAM can also be determined using the communications interface using the VTV query command: "? vtvmeminfo". Please note that a floppy disk driver memory leak affects RAM in some versions. For more information on managing this leak, see AppNote 2 - Floppy Driver Memory Leak and Boot Disk Creation. Note: this problem has been resolved in

versions 2.0 and later.

b. Low Storage Alarm

The Low Storage alarm is associated with the Storage Card (Disk-on-Chip Flash Device). The Storage Card acts like the hard drive on a standard Personal Computer (see FAQ 28 for more information). The default minimum free space setting is 160 kb. If the available free space goes below 160 kb, the VTV will display a Low Storage alarm in the Alarms folder. Unlike the Low Program Memory alarm, a Low Storage alarm will not trigger a separate warning message. See VersaTenn V AppNote 1 - Data Logging Capacity Calculations

Since the Storage Card is persistent (non-volatile), rebooting the chamber will have no effect on the alarm condition. More detailed options are outlined in AppNote 5 - Low Storage Alarm.

To find out how much Storage Card memory is available, query the chamber with the following command: "? scinfo"   The chamber will reply with the total memory on the Storage Card and the amount of free memory.

30. **Why does the VersaTenn V return "Invalid Command" every time I type a letter when communicating with the VTV using HyperTerminal?**

When communication over TCP/IP, the VersaTenn V TCP/IP server expects commands to come in individual packets: "? sp1". This works fine when using programs such as Tidal Engineering's Simple Comm. However, programs such as HyperTerminal send each letter of a command in a separate packet: "?", " ", "s", "p", "1". The VersaTenn V TCP/IP server thinks each of these is a command and responds to each with "Invalid Command".

A similar problem occurs when users try to use HyperTerminal over serial communications. The VersaTenn V has a communications timeout of one second, any commands the take longer then one second to type are parsed as incomplete commands.

31. **Why does HyperTerminal return double responses to my commands and queries?**

You may have the "send line ends with line feeds" checkbox enabled in HyperTerminal. To eliminate the double response issue, go to the ASCII setup in HyperTerminal and clear the "send line ends with line feeds" checkbox.

32. **When I cycle the power on the controller, the program never loads and the screen is blank. Why?**

The files in the data directory may have become corrupted. You will need to reinstall the VersaTenn V program.

The program installation disk and installation directions are available from Tenney Environmental. (www.Tenney.com) It is important to note that after reinstalling the application you will lose your chamber type and all user defined settings will return to their default values. After installation, you will need to set the chamber type to the proper chamber (Temp Humidity, Temp Only, Temp Temp) It is VERY IMPORTANT to set this to the correct chamber type, other wise serious damage may occur to the chamber. After setting the correct chamber type you must reboot the controller, then manually set any desired values under the Setup folder. When you install a new version of the VersaTenn V application, all your test profiles remain intact and available.

If reinstallation doesn't solve the problem, you will need to manually delete all the files in the data directory. These files will be automatically recreated the next time you start the system. Make certain there are no floppy disks in the VT V drive. Connect a PS/2 Keyboard and a VGA monitor to the VT V and reboot the system. Press F5 to stop the VersaTenn V application from booting. From the C:> prompt, type the following:

del c:\data*.*
del c:\lang*.*
del c:\web*.*

Alternatively, there is a Data Directory Deletion disk available from Tenney Environmental. (www.Tenney.com).

Simply run the VTVClean.exe program on your PC to create a Data Directory Deletion floppy disk. Insert this disk in the floppy drive and reboot the controller. All the files in the data directory will be automatically deleted. Remove the disk and cycle the power on the controller. You will need to reset your chamber type and manually change the Setup values to the ones listed in the manual supplied with your chamber. Your test profiles will remain intact and available.

33. Why can't I get HyperTerminal to connect over RS232?

You may not have HyperTerminal correctly connected. For communications to work you should make sure the port you have specified in HyperTerminal is the same port the serial cable is connected to. On your PC COM1 is usually the left or top port, COM2 is usually the bottom or right port. The serial cable is a straight thru cable. Null modem cables will not work.

In addition, you may not have HyperTerminal correctly setup. Go to HyperTerminal's Properties window and select the Configure button. Confirm that the bits per second is set to 19200, data bit is 8, parity is none, stop bits is 1, and flow control is none. Navigate to the Settings tab and press the ASCII Setup button. Uncheck the "Send line ends with line feeds". Add a check to

"Append line feeds to incoming line ends". Uncheck "Force incoming data to 7-bit ASCII".

34. Why can't I get SimpleComm to recognize the "*IDN?" command when I add it to the send list?

When adding the *IDN? command to the list, only add the letters "IDN". The list automatically adds the "?" to the list commands when it queries data.

35. What do Proportional Band, Rate and Reset mean in the PID settings?

The VersaTenn V uses Proportional Integral Derivative (PID) control for fast and accurate control of up to two different process variables, Temperature and Humidity.   The Proportional Band, Rate and Reset settings control the PID algorithm.

The Proportional Band setting or PB determines the amount of heating or cooling for a given process error. The smaller the PB, the larger the output will be for a given error. For example, when the error is 3 degrees and the proportional band is 6 degrees the Output will be 50% (assuming 0 Reset value). The proportional band is inversely related to the gain of the system. The Proportional Band also determines when the Reset (integral) term is set to 0- to prevent "windup".   The VersaTenn V's output is always 100% heating or 100% cooling outside the proportional band.

The Reset setting controls the Integral portion of the PID calculation. The Integral portion of the PID algorithm fine-tunes the output control when the chamber gets very close to the setpoint and drives the process error to zero. Larger values will drive the chamber to the setpoint quicker, but the process variable can oscillate around the setpoint. Smaller values will drive the chamber to the setpoint more slowly but the process variable will be more stable.

The Rate setting controls the derivative term of the PID. The higher the Rate setting, the larger the Derivative term will be. The Rate is usually set to 0 for Tenney environmental chambers.

More information about PID control is available at http://www.jashaw.com/pid/

36. Why do certain outputs show up twice in the Events/Digital Outputs folder

The Digital Outputs folder in the Events window displays the function and the current value of each of the VersaTenn V's 32 digital Outputs. This folder can be useful when troubleshooting the chamber and controller.

In most chamber configurations, the same device is mapped to different outputs to provide for flexible chamber hardware configurations. This allows the same chamber configuration file to support multiple output board configurations. For example, the first 6 Outputs can be driven from two different connectors in most systems.

Some Outputs names appear more than once in the Digital Outputs folder for some chamber configurations when a device is required for both Channel 1 and Channel 2. A Temperature/Humidity chamber, for example, will often have a High Artificial Load (HighAL) device on Output 2 for Channel 1, and a High Artificial Load (HighAL) device on Output 27 for Channel 2.

37. **Why do some Outputs in the Events\Digital Outputs folder say Time Prop and display over 100% output (i.e. 205%)?**

The Digital Outputs folder in the Events window displays the function and the current value of each of the VersaTenn V's 32 digital Outputs. This folder can be useful when troubleshooting the chamber and controller. The chamber configuration (Setup Screen) determines the assignment for each Output.

Click on any Output on this screen and information about it is displayed in the window at the bottom of the screen. The Output's configuration is either On/Off, or Time Proportioning. An Output configured as On/Off can have a value of either On or Off. Time proportioning Outputs are in percent.

Time proportioning Outputs can also have special value that indicates that they follow another Output, or that they follow another Output but are the opposite, on an instantaneous basis.

An Output value of the form 1nn% will follow Output nn but will be the opposite, i.e. the Output will be on when Output nn is off.

For example: When Output 12 has a value of 105% it will always have the opposite state of Output 5, on an instantaneous basis. Note that Output 12 will have a duty-cycle of
100-the duty cycle of Output 5 on a duty cycle basis. Thus, when Output 5 has a duty cycle of 75%, Output 12 will have a duty-cycle of 25%.

An Output value of the form 2nn% will follow Output nn exactly, i.e.the Output will be on when the Output nn is on.

38. **I have successfully communicated with the VersaTenn V over TCP/IP before, but am now unable to do so, why?**

Under certain conditions, the VersaTenn V TCP/IP server may hang up. Try disabling and re-enabling the TCP/IP server. On the VersaTenn V control panel,

press the Comm button and the TCP/IP Server folder, disable the server, wait a moment for the change to take effect, then re-enable it.

39. What are the VTV's 6 events and how are they generally used?

The Event outputs are 6 Solid State relays that can be controlled by the VersaTenn V statically and or dynamically (with a program). These relays are on a 6-Channel printed circuit board assembly that is optional on most Tenney/Lunaire chambers so you need to make sure you have the option.

To set them statically (no program running) just go to the event screen and check the relays you want on and uncheck the relays you want off and then press Apply. Note that these output can only come on when the chamber is on.

To set them dynamically, just follow the program setup wizard, and set the check boxes appropriately for each step of the program.

There are a couple of other options on the Event screen that allow the program to control a few parameters of the control algorithm, specifically drier operation and LEV2.

40. Why doesn't setpoint 2 (humidity) turn off when I send the command "= sp2 -1"?

Normally, sending the command "=sp1 -1" will turn off channel 2 on temperature/humidity chambers. Some versions of the VersaTenn V (1.3.9 - 1.4.86) use the command "=sp2 -1000" to turn off channel 2 when in humidity mode.

41. What causes the error message "Bad Sensor Reading"?

The error **Bad Sensor Reading** reports a problem with communications between the VersaTenn V touch-screen and it's Olympic board. There was an error in the communications response while querying the attached sensors and the result could not be processed. This must occur at least four times in succession for the error condition to occur.

This error can occur occasionally due to a noisy electrical environment, or rarely a bad serial connection. If this is an occasional error the cause is more likely noise then a bad connection. Note that this is not the same error as **Internal Comm Error**. There are communications, just unexpected responses.

42. Why can't we reach the high temperature/high humidity condition of 85C and 95% humidity?

Some users have found that when they first turn on the chamber, the temperature levels out at 85C and the humidity goes to 95%. After about ten

minutes the low stage compressor starts up, and the humidity inside the chamber goes down to about 60%. The steam generator is full on when this happens but they can't reach the condition that they need.

Make sure that the Channel 11 output is set to "Time Proportioning Control" and not "On/Off". "Time Proportioning Control" prevents the ambient coil from being on all of the time which reduces the chamber humidity, thus allowing the chamber to reach a higher humidity. Channel 11 can be controlled from the Events Screen while running a program as well as during steady state mode.

43. Why doesn't my USB storage key work?

Your USB key may be incompatible with the VersaTenn V. The VersaTenn V controller only supports storage devices manufactured by SanDisk and PNY.

If you tried to connect a USB key from another manufacturer and the connection failed, both the USB and floppy drives become inaccessible. You will need to reboot the system before attempting to connect with a SanDisk or PNY key.